

REMARKS

Claim 3 stands rejected under 35 USC §112, second paragraph. Claims 1-14 stand rejected under 35 USC §101 as being directed to non-statutory subject matter. Claims 1 and 10-14 stand rejected under 35 USC §102(b) as being anticipated by Adusumilli, U.S. patent 5,870,749. Claims 2-9 stand rejected under 35 USC §103(a) as being unpatentable over Adusumilli, U.S. patent 5,870,749 in view of Sasagawa et al., U.S. patent 6,028,863.

Claim 3 have been amended to more clearly state the invention, correcting the dependency to claim 2. Reconsideration and withdrawal of the rejection of claim 3 under 35 USC §112, second paragraph, is respectfully requested. Reconsideration and allowance of each of the pending claims 1-14 is respectfully requested.

Reconsideration and withdrawal of the rejection of claims 1-14 under 35 USC §101 as being directed to non-statutory subject matter is respectfully requested.

The Court of Appeals for the Federal Circuit addressed the "mathematical algorithm" exception in State Street action cited by the examiner. 149 F.3d 1368; 47 USPQ2d 1596 (Fed. Cir. 1998) See 149 F.3d at 1373-75, 47 U.S.P.Q.2D at 1600-02. . Section 101 reads:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

As stated in State Street, "When a claim containing a mathematical

formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (e.g., transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101."

In *State Street*, the court, following the Supreme Court's guidance in *Diehr*, concluded that "unpatentable mathematical algorithms are identifiable by showing they are merely abstract ideas constituting disembodied concepts or truths that are not 'useful.' . . . To be patentable an algorithm must be applied in a 'useful' way." *Id.* at 1373, 47 USPQ2d at 1601. In that case, the claimed data processing system for implementing a financial management structure satisfied the § 101 inquiry because it constituted a "practical application of a mathematical algorithm, . . . [by] producing 'a useful, concrete and tangible result.'" *Id.* at 1373, 47 USPQ2d at 1601. The *State Street* formulation, that a mathematical algorithm may be an integral part of patentable subject matter such as a machine or process if the claimed invention as a whole is applied in a "useful" manner, follows the approach taken by the Court of Appeals for the Federal Circuit en banc in *In re Alappat*, 33 F.3d 1526, USPQ2d 1545 (Fed. Cir. 1994). If a mathematical algorithm is found, the claim as a whole is further analyzed to determine whether the algorithm is "applied in any manner to physical elements or process steps," and, if it is, it "passes muster under § 101."

Computer programs embodied in a tangible medium, such as floppy diskettes, are patentable subject matter under 35 U.S.C. § 101 and must be examined under 35 U.S.C. §§ 102 and 103." *In re Beauregard et al.*, 53 F.3d 1583; 35 USPQ2d

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1383 (Fed. Cir. 1995).

In a pertinent case, In re Lowry, 32 F.3d 1579; 32 USPQ2d 1031 (Fed. Cir. 1994), Lowry appealed the U.S. Patent and Trademark Office Board of Patent Appeals and Interferences' rejection of all claims in Patent Application Serial No. 07/181,105 (now U.S. Patent 5,664,177). On July 30, 1993, the Board reversed the rejection of claims 1 through 5 under 35 U.S.C. § 101. The Board found that claims 1 through 5, directed to a memory containing stored information, as a whole, recited an article of manufacture. The Board concluded that the invention claimed in claims 1 through 5 was statutory subject matter. The Board also affirmed the rejection of claims 1 through 19 under 35 U.S.C. § 103 and claims 20 through 29 under 35 U.S.C. § 102(e). Lowry's patent application entitled "Data Processing System Having a Data Structure with a Single, Simple Primitive" related to the storage, use, and management of information residing in a memory. Lowry's data structure comprises a plurality of attribute data objects (ADOs) stored in memory. An ADO is a single primitive data element "comprising sequences of bits which are stored in the memory as electrical (or magnetic) signals that represent information." The Court of Appeals for the Federal Circuit stated: "Contrary to the PTO's assertion, Lowry does not claim merely the information content of a memory. Lowry's data structures, while including data resident in a database, depend only functionally on information content. While the information content affects the exact sequence of bits stored in accordance with Lowry's data structures, the claims require specific electronic structural elements which impart a physical organization on the information stored in memory. Lowry's invention manages

information. As Lowry notes, the data structures provide increased computing efficiency." ... "Indeed, Lowry does not seek to patent the Attributive data model in the abstract. Nor does he seek to patent the content of information resident in a database. Rather, Lowry's data structures impose a physical organization on the data." The Court held that the Board erred by denying patentable weight to Lowry's data structure limitations and reversed the Board's determination that claims 1 through 19 are obvious and also reversed the Board's decision that claims 20 through 29 are anticipated under section 102. The Court of Appeals for the Federal Circuit required that the Patent and Trademark Office (PTO) must consider all claim limitations when determining patentability of an invention over the prior art, citing Gulack, 703 F.2d at 1385, stating that: " Lowry's data structures are physical entities that provide increased efficiency in computer operation. They are not analogous to printed matter. The Board is not at liberty to ignore such limitations."

Applicants respectfully submit that the subject matter of the invention as recited in each of the pending claims 1-14 is directed to patentable subject matter under 35 U.S.C. § 101 and must be examined under 35 U.S.C. §§ 102 and 103. Independent claims 1, 10, and 14 respectively recite a method, compiler and platform independent framework and a computer program product for parsing and generating data structures. As in the above In re Lowry, the subject matter of the invention as recited in each of the pending claims 1-14 is patentable subject matter under 35 U.S.C. § 101.

The method, compiler and platform independent framework and computer program product for parsing and generating data structures advantageously is used

with various applications, such as ATM call control or data communications, control of writing and reading data storage in disk, tape, or the like, and limiting the subject matter of the invention to a particular application is not required under 35 U.S.C. § 101.

The method, compiler and platform independent framework and computer program product for parsing and generating data structures as recited in each of the pending claims 1-14 provides a useful result. In accordance with the invention, instead of implementing a table or rule object as a redundant definition of the data structure, the length and location of each of the data structure's parameters are defined within the table or rule object by the sizeof() and offsetof() functions. Thus, the table or rule object is based on the definition of the data structure itself.

Thus, reconsideration and withdrawal of the rejection of claims 1-14 under 35 USC §101 is respectfully requested.

Applicants respectfully submit that each of the independent claims 1, 10, and 14 is patentable over all the references of record including Adusumilli and Sasagawa et al. Only Applicants teach a method, compiler and platform independent framework for parsing and generating data structures that includes sizeof and offsetof functions utilized for defining a length and a location of each parameter of a data structure. Only Applicants teach that the length and location of each parameter of the data structure are stored within an identifier object in a data structure definition.

Adusumilli, U.S. patent 5,870,749 discloses a method for translating attribute data carried in Common Management Information Protocol (CMIP) Protocol Data Units (PDUs) to/from custom designed data structures. A supplementary method

for incorporating user's preferences on the data structures and the relationships between different fields in these data structures and the corresponding attribute values is also provided. The translation method automatically performs conversions between the user-designed data structures and various CMIP requests/responses automatically, and, in accordance with user's preferences. The method allows users to simplify and/or compact the storage representation of the Managed Objects by taking advantage of application specific knowledge, and by eliminating unnecessary fields from CHOICE data types in the target data structures. Benefits of the methods presented in this disclosure include automatic translation of CMIP PDUs to/from user-designed data structures, ability to store Managed Object data in space-efficient manner, and automatic generation of data structures for use in communicating with devices using proprietary data representation. At column 11, lines 18-50 states:

"The MOClassTable shown in FIG. 4 contains an entry for each configured Managed Object Class. The localFormClassId field contains the local form identifier (an integer value) specified using the LOCAL-ID clause of the CLASS configuration. This may be used internally in place of the object-identifier of the class. The CStructureName corresponds to the name of the C structure specified with the DATA-TYPE clause of the CLASS configuration. By default the configuration program derives this name from the managed object class name (for example by adding a prefix and capitalizing the first letter of the class name). The user can set this to his/her own data structure name, if desired. The CStructureSize field contains the size of the C structure specified in the DATA-TYPE clause. This is only set in the translation tables (the sizeof() operator may be used to compute this size), and is not used in the configuration stage. The ClassInfoPointer field is used to store a link to the meta

data generated by the GDMO compiler for this managed object class definition. The ClassAttributeTablePointer points to a class-specific attribute table that contains an entry for each attribute included in the ATTRIBUTES clause of the CLASS specification. The localFormAttributeId field of each ClassAttributeTable entry contains the local-form identifier value of the attribute. This value is copied from the corresponding entry in the GlobalAttributeTable at the time of generating translation tables or a new configuration file. The fieldName field is set to the field-name specified for this attribute in the ATTRIBUTES clause, or to the attribute-label if the field-name is omitted. The fieldOffset field is set to the offset of the corresponding field in the C structure associated with the managed object class. This field is set only in the translation tables (the offsetof() macro may be used to compute the offset of the field) and is not used in the configuration stage."

Sasagawa et al., U.S. patent 6,028,863 discloses a device at the terminal unit and a device at the network that support an interim local management (ILMI) protocol. When the power is applied to the device at the terminal unit, it notifies the device at the network of support range information about a VPI/VCI of the device at the terminal unit. The device at the network assigns a VPI/VCI to the device at the terminal unit according to the support range information about the VPI/VCI received in a cold start trap message from the device at the terminal unit when a signal is received from the device at the terminal unit. FIG. 43 shows the data format for use in specifying the connection identifier contained in the signaling message used in the fifth preferred embodiment of the present invention. It shows the details of the element (14) of each message shown in FIGS. 29 through 31. In FIG. 43, the field "virtual path connection identifier" stores the VPCI (corresponding to the VPI), and the field "virtual channel

identifier" stores the VCI. The invariable indication field "preferred/exclusive" stores a 3-bit value having one of the following meanings. 000: VPCI is invariable, and VCI is also invariable. 001: VPCI is invariable, but VCI is variable. 010: VPCI is variable, but VCI is invariable.

Each of the independent claims 1, 10, and 14 is patentable over all the references of record including Adusumilli and Sasagawa et al. Only Applicants teach a method, compiler and platform independent framework for parsing and generating data structures that includes sizeof and offsetof functions utilized for defining a length and a location of each parameter of a data structure. Only Applicants teach that the length and location of each parameter of the data structure are stored within an identifier object in a data structure definition. Applicants acknowledge that the sizeof() and offsetof() functions are built into the C and C++ programming language.

Adusumilli fails to disclose and provides no suggestion of utilizing sizeof and offsetof functions, defining a length and a location of each parameter of a data structure. Adusumilli fails to disclose and provides no suggestion of storing said length and said location of each said parameter of the data structure within an identifier object in a data structure definition, as taught by Applicants and recited in the independent claims 1, 10, and 14. Thus, independent claims 1, 10, and 14 are not anticipated by, nor rendered obvious by the Adusumilli patent. Sasagawa et al. adds nothing to render obvious subject matter of the invention as recited in the independent claims 1, 10, and 14. Thus, each of the independent claims 1, 10, and 14 is patentable.

Each of the dependent claims 2-9, 11-13 further define the subject matter

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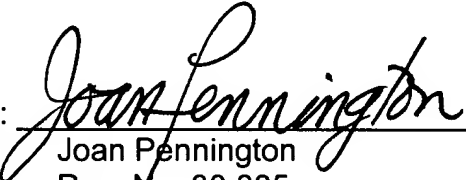
of patentable independent claims 1, 10, and each of the dependent claims 2-9, 11-13 is patentable.

Applicants have reviewed all the art of record, and respectfully submit that the claimed invention is patentable over all the art of record, including the references not relied upon by the Examiner for the rejection of the pending claims.

It is believed that the present application is now in condition for allowance and allowance of each of the pending claims 1-14 is respectfully requested. Prompt and favorable reconsideration is respectfully requested.

If the Examiner upon considering this amendment should find that a telephone interview would be helpful in expediting allowance of the present application, the Examiner is respectfully urged to call the applicants' attorney at the number listed below.

Respectfully submitted,

By: 
Joan Pennington
Reg. No. 30,885
Telephone: (312) 670-0736